Learning
and
Technology
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Class Newsgroups

Learning and Technology (EDC 664)

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Course Description:

Learning and Technology is a (4) credit graduate course. The focus is on learning **with** technology. The content of the course will involve deep reflection on how people learn and the role that technology plays in the learning process.

Until relatively recently, cultures have perpetuated themselves across generations with, at best, simplistic ideas about how people learn. Frank Smith in *Learning and Forgetting*, will argue that the movement away from these simple ideas toward more scientific conceptions of learning has **no**t been one of steady progress. He finds faults the psychological theories of learning that have led to current school conceptions of learning as the acquisition of information reinforced with rewards.

Conceptions of learning have evolved dramatically over the past decades and are continually changing. Scientific investigations of cognition, memory, cognitive development, and studies of how these relate to the contexts of culture and emerging technologies have radically challenged simplistic accounts of learning. Acknowledging the need for an integrative statement about the science of learning, the National Research Council of the National Academy of Sciences convened a Committee on Developments in the Science of Learning. This committee, consisting of prominent researchers from diverse disciplines, spent two years tackling two deceptively simple questions:

- How do people learn?
- How should teachers teach?

Their answer to these questions takes the form of a book, *How People Learn: Brain, Mind, Society and School*. We will be reading this book together and in concert with *Learning and Forgetting*. Is there enough accumulated knowledge about human learning that it can be organized to form a coherent science of learning, and one that has important implications for the practice of education? Cognitive science indicates an assumption that learning is best approached by placing such topics as thinking, knowledge, representation, and problem solving at the theoretical center. This orientation, the committee asserts, is a major shift from the behaviorist days of the mid-20th century during which such openly cognitive notions were anathema to many research psychologists. It is this research that causes Frank Smith to celebrate earlier 'classical" notions of learning and forgetting.

The third book we will read together, *Share Mind*s by Michael Schrage deals with organizational learning in the workplace. While over a decade old, it still contains many insightful visions of the ways in which technology will be paired with learning that foreshadow changes yet to come. He forcefully argues that the technologies are both the reflection of and the force that shapes our abilities to work together.

We also will be actively exploring websites. There will be one website that will be selected each learning cycle and exploration may involve some active engagement. These explore/engage activities, like the reading, will be part of our group experience. They will help us examine learning approaches which continues to emphasize the acquisition of isolated sub-skills taught out-of-context and contrast this with models of inquiry-based learning that underlies this course and the OMET program. We will compare and contrast learning in communities with learning in classrooms in school and work settings.

This course is about learning--our learning. Throughout the course there will be opportunities to explore how you learn new skills, new information and how you create new knowledge. We will explore online learning, project-based learning, modeling, thinking in a context, community-based learning and teaching strategies that transfer more responsibility to the learner. You will be able to chose from a broad range of technology tools to enhance your learning individually and in small groups.

This is NOT a course about teaching or curriculum.
It is a course about learning - preferably yours.

This program subscribes to a sociocultural historical theory of learning. Basically, this theory proposes that all learning occurs in context through joint activity between differently skilled persons working toward some shared (usually negotiated) goal or purpose. Further, that activity is largely accomplished through social interaction, and that interaction is mediated by tools (signs and symbols).The historical element refers to the idea that tools acquire character and meaning (social and cognitive) over time and use, i.e. they have a history which manifests or recapitulates the history of the practice in which they are used. Some applied researchers choose to focus on what constitutes context and features of successful and less successful contexts for learning others involve themselves in the nature of the tool embedded in these sociocultural contexts. Ideally, your work should be mindful of a desire to improve the lives and learning of children. However, the focus of the course work should be on your own personal learning. Those who understand their own learning make better teachers. Since knowledge is context-specific and learning is a socially embedded process of negotiation and acculturation,

This class will be treated like a research and development facility or art studio in which we collaborate, engage in discussion and learn to use specific software packages when a "teachable moment" occurs. Synchronous sessions will be spent, discussing the assigned readings and current events. There will also be opportunities to solve student problems. Do not wait until the last minute to begin research, project development or online communication!

The backbone technology in the course is the Internet. We will be using the World Wide Web, Tapped-In, newsgroups, email, reference materials, and other software packages to support our learning, on-line class discussions, for constructing web pages and other instructional materials. Students in this course will work individually and collaboratively, so each can pursue his or her own interests and utilize individual talents while at the same time contributing to our collective learning community.

Course Objectives:

After the course, students should be able to:

- Define learning both informally and in the context of theories of psychology, cognitive science and Education.
- Understand the concept of community-based learning and how this contrasts with classroom-based learning.
- Reflect on personal learning and contrast viewpoints on learning and development.
- Develop reflective writing skills.
- Understand how learning is connected to and influenced by individual experience, talent, and prior learning, as well as language, culture, family and community values.
- Learn to use new software.
- Support the work of classmates and participate in class discussions.
- Structure learning through intellectually challenging computer-based projects.
- Design and demonstrate the acquisition of new technological fluency in telecommunications and multimedia projects that provide opportunities for students to use technology as a tool, medium, and setting for learning via the Web.
- Create a digital portfolio of your work and learning in an area of inquiry chosen by the student.
- Perform and display their own educational technology projects.
- Develop an awareness of what journals and scholars relate to this field, technology resources, and services available to different learning communities.

Course Materials:

The course is arranged in 7 learning cycles. For the most part, cycles take place over two weeks and have a theme, a set of readings, discussion questions for newsgroups, a website or two to explore, a small group meetings and class meetings in Tapped In. You will be arranged in small circles of about 4-5 students that serve as a reference group as you work on your learning portfolio.

Your work must be transmitted electronically. Students are responsible for storing their work on disk (and print form when appropriate) and maintaining backups of their files. Students are also expected to spell-check documents and employ good web design elements. Web sites may be tuned-up at http://www.websitegarage.com. You can read more web design at Kathy Schrock's guide for Educators http://school.discovery.com/schrockguide/eval.html.

You are expected to read the assigned books and articles so that you can discuss them intelligently synchronously, asynchronously and in written assignments. You will be evaluated based on their ability to discuss the readings during online discussions with attention to efforts to move the community thinking forward. Everyone will be encourage to recognize and support efforts that help clarify our thinking.

The strongest evidence of thoughtful reading is your ntegration of ideas gained from the texts and from our discussions in individual and group activities. Students are always encouraged to supplement the resources distributed by the professor with materials they believe may be of use in their personal projects or of interest to their classmates.

Do not hesitate to post the URLs of web-sites in our class newsgroups if you think they may be of interest to your classmates. You are expected to pursue and read any materials that may enhance your understanding of your topics. Your work should be stored on the web with clear links to each assignment easily found on your personal website. This course will use computers extensively in the creation of personal projects and while exploring the nature of virtual communication. You are responsible for acquiring any technical skills necessary for you to succeed in the course. Do not be afraid to ask for help! The profiler will help us know who has different skills.

Books:

Required:

- Bransford, et al. ***How People Learn: Brain,* Mind, Society and School** ok
- Smith, Frank. ***The Book of Learning and Forgetting*** — CSULB
- Michael Schrage ***Shared Minds*** (or) ***No more Teams: Mastering the Dynamics of Creative Collaboration***

Optional books

These books are for you to use as references in your learning designs. The Web Learning Fieldbook focusses on the workplace, the Learning Highway is more of a beginners book for school based use of the web and Community Building is for those who design online communities. I assume that you will want to choose one of these options.

→ Beer, Valorie. ***The Web Learning Fieldbook Using the WWW to Build Workplace Environments***

Trevor Owen & Ron Owston, ***The Learning Highway***

Amy Jo Kim, ***Community Building on the Web***

As a professional educator and a contributor to our class learning community, you are encouraged to supplement your course readings by exploring web sites, journals, newsgroups, and periodicals related to teaching and learning with technology. You can share these resources in class and via our newsgroups.

Course Schedule

This is the plan, but it may change as we move through the course of our learning adventure together. As the instructor, I have set the course relying in part on the surveying skills of other faculty, but as we travel along, we may depart on "unplanned scenic diversions" that explore parts of the learning landscape that is uncharted. Planning is different than travel. I invite you to help us explore new regions of learning.

Learning Cycle Schedule

Cycle 1: Learning Intro; Understanding Reflective Thinking

September 5-17

Read:

In Harvard Education Review: Voices Inside Schools: The Poet, the CEO, and the First-Grade Teacher by MARY ELLEN DAKIN

Examine Course Texts:

How People Learn – Intro

Learning and Forgetting – Preface to page 5

Shared Minds – Intro

Discuss (Newsgroups):

Introductions: Since you know each other by now, please introduce yourselves by describing one of the most stimulating learning experiences you have participated in.

Respond to one or more of these prompts in newsgroups

What is Learning?

What does it mean to learn something by yourself?

Can you learn without technology?

Explore (Web):

Respond to Pepperdine Profiler File

Reflective thinking on Learning: Learn something new online. You might want to start at Bobbie's Place http://kerlins.net/bobbi/technology/tutorials/ or just go looking...follow a tutorial or technology hint and be prepared to share your learning with us.

Meet (Tapped In)

Since we don't know each other, I would like to meet each of you individually in Tapped in. I will hold open office hours on Wednesday and email scheduled appointments for Monday Sep. 10th. If none of these times work for you, I can make other times available. I just want to have an opportunity to get to know each of you and your learning needs in this course. I will be asking you about your understanding of the course, your ideas for a project and who you would like to have in your Learning Circle. You might want to use notes in Tapped In or make notes in Word so you can copy responses without having to speed type.

Open Office hours on Wednesday, Sep 5, 3-5, 8-12 pm, PT -- Drop in any time.

Monday Sep. 10 (make email appointment for anytime from 9am to 12pm)

Class Meeting

Monday Sep. 17: (7am, or 7pm)
Reflecting on Learning

Cycle 2: Thinking and Learning and the Role of Technology

Sep. 17- Oct. 1

Read

Learning And Forgetting ... P1-30

How People learn • Chapters 2-3

Discuss (Newsgroups):

What does it mean to say that technology is "shared minds made visible?"

What would Frank Smith say if he was asked to respond to the National Research Council position on learning?

Explore (web):

Visit Learning with Technology... an example of a resource created by students for the web.

Knowledge Hunt: Bring back something that you learn to share with the group

Tapped In

Meet (Tapped In):

Sep. 24: Learning Circle discussion of portfolio ideas

Oct. 1: Class Discussion of what was learned from the knowledge hunt

Learning Portfolio Assignment

Learning Blueprints Due SEPTEMBER 30.

Cycle 3: How Children Learn

Oct. 1- 15

Read:

Learning and forgetting • 41-73

How people learn • Chap 4-5

Reread Newsgroups intros from the first cycle that describing learning contexts for students

Discuss:

What were the critical features of the learning contexts we shared?

What does Brain Research say about education?

How is adult learning different than child Learning?

Explore:

Kristi's First Grade Learners on the Pond Project

Watch "The Pond" (Shared Wisdom– NCREL–)

ThinkQuest – pick one of the finalist entries explore and discuss the students' conception of teaching and learning.

Meet:

Oct. 8:Learning Circle discussions of portfolio ideas

Oct. 15: (7am or 7 pm) Class Discussion on Comparison between the pond projects

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Cycle 4: The Design of Learning Environments & Technology

Oct. 15-29

Read:

Learning and Forgetting • 81-100

How People Learn • Chap 6-7

Discuss:

How do you balance student, knowledge, community and assessment dimensions in a learning context?

What roles does assessment play in learning?

Explore

The Epistemology and Learning Group at the MIT Media Lab explores how new technologies can enable new ways of thinking, learning, and designing. The group creates new "tools to think with" and explores how these tools can help bring about change in real-world settings, such as schools, museums, and under-served communities.

White Papers, Secretary Conferences on Technology and Assessment and Assessment

Your task is to learn something that you value and bring it back and teach us. Be prepared to project the site and show us as you explain.

Meet:

Oct. 22:Learning Circles: Learning Portfolios

Oct. 29: (7am or 7pm) Class: The design of Learning Environments

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Cycle 5: Teacher and Adult Learning and Technology

Oct. 29-Nov. 12

Read:

How People learn Chapter 8-9

Shared Minds, Chap 1-5

Leaders in the field

Reread Newsgroups intros and for all of the ones that describing learning contexts for adults.

Discuss:

Addressing the issue of balance, school reform and school renewal and the role of technology

Consider what features we described in our contexts for adult learning

Explore:

The School Renewal WebCenter

Participate in one or more of the discussion forums.

http://thegateway.org/

Meet:

Nov. 5: LC Learning Portfolios teaching and learning process

Nov. 12: Class (7am or 7pm) School Renewal

Cycle 6: Collaborative Learning beyond the School

Nov. 12-26

Readings:

Shared Minds • Chap 5-10

Discuss:

The role of others in your learning experience

Explore:

Design a short profiler survey in a setting that you are involved in.

Meet:

Nov. 19: Learning Circles: Learning Portfolios

Nov. 26: Class: Community Profiling

Cycle 7: Reflections on Designing for Collaboration

Nov. 26 - DEC. 15

Read:

Shared Mindsn • Chap. 11-14

Discuss:

Reflections on Learning

Explore:

Learning with new technologies ENT Harvard

The Inquiry Learning Forum Deep Reflection

Share:

Dec. 3 & Dec. 10 Student Exhibitions

Learning Portfolios are Due on DEC. 3 - Late Portfolios are not examples of excellent student work. Budget your time so that you are finished on time.

Final Learning Reflections can be completed by Dec. 10.

Designing Your LEARNING Experience

The main learning process in this class is via project work and reflection on that work. Specifically, doing something and thinking about it with others and alone. Learning is most effectively accomplished with the help of others, though you will be graded as an individual and as a member of a small group. Depending on the topic you choice to learn about, you have two options for sharing. One is a exhibition to the class and the other is an exhibition on the web.

You begin by selecting an area of inquiry and designing a plan to explore and exhibit newfound learning. Play to your strengths and do not leave the hardest work to the last minute. The best work in this class has been created by students who embraced the opportunity to learn something new. *No topic is too crazy.* The project follows the same structure as the course and includes these processes not necessarily in this order:

- LEARN
- REFLECT
- CONSTRUCT
- DISCUSS
- EXHIBIT

Creativity, intellectual rigor and innovation are highly valued! Each student will choose an area of inquiry which all course work, with the exception of assigned readings and classroom tutorials, will revolve around. An area of inquiry should be deep and broad enough for a student to demonstrate new learning and provide opportunity for rich exploration and construction.

Chosen areas should be fields/topics/disciplines already changed/enhanced by technology or could be in ways developed by a student. Several pieces of software should be mastered and evaluated relative to the chosen area of inquiry. You may know something about an area of inquiry or have a significant interest in that topic, *but still have room for growth.*

Topics might include: artificial life, virtual creatures, video game design, digital poetry, digital imaging and graphics production, music composition, artificial intelligence, virtual worlds, number theory, chaos theory, fractal geometry, global information systems, data collection and interpretation, physics, genetics.

All of your work, thoughts, products, logs and discovered digital resources will be assembled in a digital portfolio on the World-Wide-Web. This portfolio is created throughout the term. The learning blueprint must be completed and have it signed by the deadline. Plan your work, jot down the due dates of your project selections and major milestones in their completion. Include other major obligations that might impinge on your course work from outside this course. Attach a copy of the completed calendar of events to your course blueprint.

Your learning blueprint must be submitted before midnight PST on 9/30/00. I will keep a copy and you will keep a copy. No changes after 10/4/00. I will try to look at projects as you compete them. Of course you are free to generate your own proposed activities and clear them with me but you must do so before 9/30/00.

WAYS OF DEMONSTRATING NEW KNOWLEDGE

Your final portfolio is worth 80% of the course grade

1) Learn Something 10% of portfolio grade
Students should collect resources, read materials related to the field, be reflective in their practice and demonstrate an understanding of their newly acquired knowledge. It is assumed that digital and traditional materials will be used for research purposes.

2) Make Something 25% of portfolio grade
Constructionism is a participatory sport. Students should construct a project using a computer that requires effort, creativity and persistence. This project should help the student learn more about their topic of inquiry through the active exploration of a problem or set of problems.

3) Use Something 10% of portfolio grade
Students should use a few different pieces of software related to their area of inquiry. You should be able to compare and contrast the ease-of-use, applicability and flexibility of the software packages. Some constructions will require the use of several different software packages. The more open-ended the package, the better. Packages such as StarLogo, MicroWorlds, Tabletop, Stella, graphics packages, Geometer's Sketchpad, Interactive Physics and musical sequencers are the types of software I have in mind. Of course, basic tool software counts, but not too much!
Reflections on learning these new packages should be included in your portfolio.

4) Join Something 10% of portfolio grade
Students should find an online community of practice and/or professional organization dedicated to your area of inquiry. You should participate in this community and record your interactions for inclusion in your portfolio.

5) Teach Something 5% of portfolio grade
Share your project with your colleagues in your learning circle. You might wan to ask them to solve a problem related to your construction. Record your

interactions and reflect upon the teaching/learning that occurs.

6) Publish Something 20% of portfolio grade
All of your work should be assembled in a digital online WWW portfolio. This portfolio should include your construction (via screen shots if no online plug-in is available), sketched from your design notebooks, online resources used by you and related to your area of inquiry, links to related materials, logs of salient online communications, what your learned about the area of inquiry, reflections on your learning and reviews of software packages used. The final portfolio should be well organized, visually attractive and make a contribution to the world of ideas.

Reflect on Learning. 20% of portfolio grade
While this reflection is primarily focused on the digital project, it can include thoughts on all parts of the course. This final commentary, like the one we read in the first week is your opportunity to pull together the learning experiences that you had during the course.

SAMPLE STUDENT PORTFOLIOS Learning with Video games
* Learn by reading relevant research and literature (pop and scholarly) related to video games
* Construct a video game in MicroWorlds or other package
* Learn to play a few video games alone or with a child. Reflect on your learning.
* Join an online community of gamers. You may even play an online game.
* Teach a colleague to play a video game and reflect on the experience.
* Publish your portfolio of work on the web.

Artificial Life
* Learn about artificial life by reading articles and books such as Artificial Life by Steven Levy and Turtles, Termites and Traffic Jams by Mitchel Resnick.
* Construct an artificial world in StarLogo.
* Learn to explore aspects of artificial life in StarLogo, MicroWorlds and Creatures.
* Join an online A-Life Community
* Teach a colleague or student(s) about important aspects of A-Life.
* Publish your portfolio of work on the web.

Digital Music
* Learn about different aspects of digital music production.
* Construct (compose) a pleasing piece of music using a MIDI device and/or sequencing/notation software.
* Learn, evaluate, compare and contrast a variety of software packages. Gain understanding of MIDI.
* Join an online community of digital musicians, composers or musicologists.
* Teach a colleague or student(s) about some portion of what you learned.
* Publish your portfolio of work on the web.

See the Rubric (Below) for example.

Sample: Rubric for Digital Portfolio

___ Subject matter is accurate.
___ Applies current instructional principles.
___ Project is appropriate to learning outcomes.
___ Content is appropriate to level of student.
___ Presentation is grammatically correct.
___ Presentation is visually appealing.
___ Reflection integrates learning experience with ideas for the course readings and discussions.

Previous projects have included--simulation design, digital poetry, music composition, artificial intelligence, virtual worlds, multimedia, digital video production, global information systems, video conferencing, animation, among others...

Grading:

Grading of the course will be determined as follows:

20% Newsgroups Discussions & Tapped In Meeting

80% Digital Learning Portfolio including 20% for final Learning Reflection

Assessment plays an important role in learning, but that belief doesn't make assigning grades any easier. However if I meet your expectations as an instructor and you meet my expectations for students then the process of grading is very simple. If this is not the case, you and I will have to come to terms with the gap between expecations and performance. You will be assessing my performance as a teacher and I will be assessing your peformance as learners. I try not to use a curve but rather to judge each person's work holistically. I provide the following rubric as a guide to help you in your work. I recognize that learning involves taking risks and it is hard to be willing to take risks if you're thinking about your grade. The more I know about what you are doing, the better position I am to judge your progress. Your final reflection is very important. If you ran into technical problems, you can still demonstrate your learning through a thoughtful reflection. BUT remember, reflection is as different from description as night is from day. I don't want a travelogue of what happened. I want your to read about why these things happened and how they are connected in a larger system of meaning.

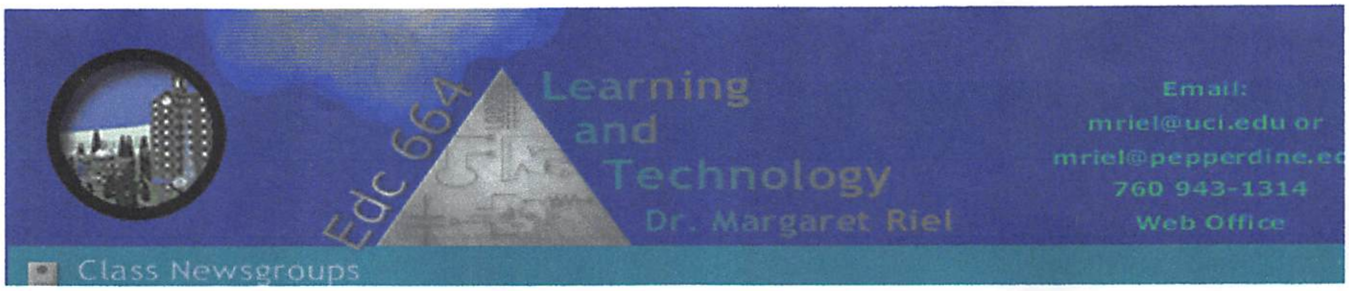
The "A" grade reflects exceptional, gradate level work. An "A" project gives a complete response with clear, coherent, unambiguous, and elegant explanations; includes a clear and well-designed web page; communicates effectively to the identified audience; shows understanding of the activities ideas and processes; identifies all the important elements of the assignment and provides details; includes rich examples ; presents strong supporting arguments; and exemplifies graduate level writing ability.

The "B" grade reflects satisfactory, graduate level work. A "B" project completes the project satisfactorily and gives a response with reasonably clear explanations; includes a webpage; understands the underlying ideas, but may be muddled; uses ideas , but not necessarily to the best effect; identifies the important elements of the assignment , but may be missing detail; presents supporting examples, but some may be unclear; exemplifies graduate level writing ability, but may have minor spelling or grammar errors.

The "C" grade reflects unsatisfactory, below graduate level work. A "C" project begins the assignment appropriately, but may fail to complete or may omit parts of the explanation; may fail to show full understanding of the assignment's ideas and processes; may make logic errors; may misuse or fail to use examples; response may reflect an inappropriate strategy for the assignment; writing has not been properly proof-read for errors.

The "F" grade reflects no work received or inadequate.

Note: Late work, by definition cannot qualify as outstanding work. Students are expected to check their email and class newsgroups every day in order to keep up-to-date with class assignments, discussions and news. You will be expected to eagerly embrace new knowledge and learn as much as you can. Most of the class assignments and projects can be personalized to explore a particular area of interest or to enhance the teaching of specific subject or skill set.



Edc 664

Learning and Technology

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Class Newsgroups

Overview

Objectives

Books & Materials

Learning Cycle Schedule

C1: Sep 5 - Sep 17

C2: Sep 17 - Oct 1

C3: Oct 1 - Oct 15

C4: Oct 15 - Oct 29

C5: Oct 29 - Nov 12

C6: Nov 12- Nov 26

C7: Nov 26 -Dec 15

Designing your Learning Experience

Demonstrating Learning

Grading

Print a copy

Learning Cycle Schedule:

Cycle 1: Learning Intro- Understanding Reflective Thinking

September 5-17

We begin the course by reflecting on what we know about learning. It is a concept that we are all comfortable with but each of us will define it different ways. The purpose of these first activities are to develop a more thoughtful understanding of learning and to extend our thinking about reflection.

Read:

In Harvard Education Review: Voices Inside Schools: The Poet, the CEO, and the First-Grade Teacher by MARY ELLEN DAKIN

Examine Course Texts:

How People Learn – Intro

Learning and Forgetting – Preface to page 5

Shared Minds or *No more Teams* – Intro

Discuss (Newsgroups):

Introductions: Since you know each other by now, please introduce yourselves by describing one of the most stimulating learning experiences you have participated in. Spend some time reflecting on this and write a few paragraphs to describe it.

Respond to one or more of these prompts in newsgroups

What is Learning?

What does it mean to learn something by yourself?

Can you learn without technology?

Explore (Web):

Respond to Pepperdine **Profiler** File. You will need to go to this site and **sign in** as a new user. You will be asked for your district and you should type in Pepperdine. You will then be given a four digit code. You should record this as you will need it. Then you sign in using your last name and the four digit code. You will find a choice of two surveys --one is a standard Basic Level Technology Survey and second is for the Pepperdine OMAET program. The second one is the one I would like you take but you can do both if you want. (I put the standard on up while I waited for the new one to be posted.)

I would like you to take both surveys and spend some time exploring the site thinking about how it might be using in your learning experiences.

Reflective thinking on Learning: Learn something new online. You might want to start at **Bobbie's Place** or just go looking...follow a tutorial or technology hint and be prepared to share something new you learned with us in Tapped in.

Meet (Tapped In)

Individual Meetings

Since we don't know each other, I would like to meet each of you individually in Tapped in. I will hold open office hours on Wednesday and email scheduled appointments for Monday Sep. 10th. If none of these times work for you, I can make other times available. I just want to have an opportunity to get to know each of you and your learning needs in this course. I will be asking you about your understanding of the course, ideas for projects and who you would like to have in your Learning Circle. You might want to use notes in Tapped In or make notes in Word so you can copy responses without having to speed type.

Open Office hours on Wednesday, Sep 5, 3-5, 8am -12 pm, PT -- Drop in any time.

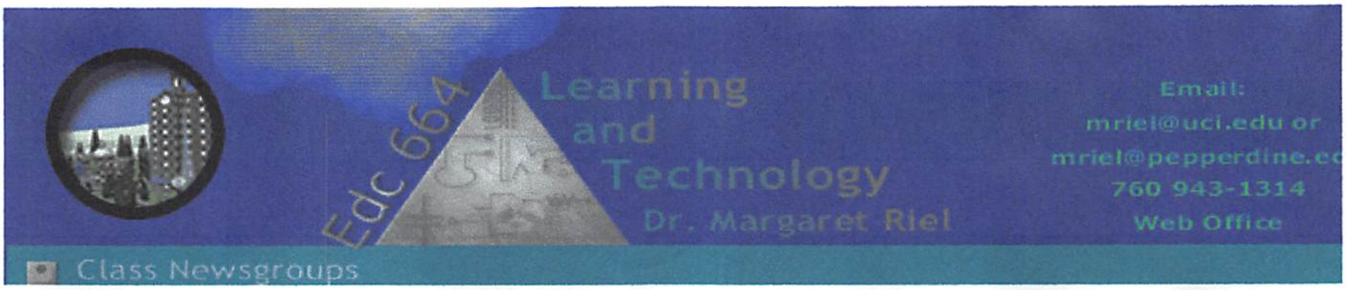
Monday Sep. 20 (make email appointment for anytime from 9am to 12pm)

Class Meeting

Monday Sep. 17: (7am, or 7pm) Reflecting on Learning

Continue ➤

Overview • Objectives • Materials • Schedule • Learning Design • Demonstrations • Grading



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Learning Cycle Schedule:

Cycle 2: Thinking and Learning and the Role of Technology

Sep. 17- Oct. 1

To help us think about how the Internet will shape learning we should visit some sites that exploit emerging tools on the edges of the network. Some of the tools on the near horizon include telerobotics (you might want to also look at bugscope, virtual creatures, simulated environments (some interesting education is taking place in active worlds),and multimedia editing skills. And we should look at tools in the making such as digital ink, and cloth keyboards (elek tex) and paper batteries. Whatever the exact dimensions or properties of evolving new tools, it is easy to predict that they will be wireless, portable, integrated, with vast storage capacity and cheaper and more ubiquitous than the cell phones of today. The Internet will be freed from the desktop boxes. Instead information may be tied to locations, or buildings by using longitude, latitude and attitude. Handheld screens or projected images from glasses will be able to read bar codes now embedded information in merchandise. Information may be displayed on virtual signposts, talking objects and 3-d animations that might guide us through a museum or help keep a team of students connected. Digital Ink will make it possible for books to be printed, unprinted and reprinted at will. Given these possible developments, we need programs and policies that will assure that educational applications continue to be designed to support teaching and learning. This takes a greater "intellectual" investment in schools by a larger part of the community.

Read

- Learning And Forgetting ... P1-30
- How People learn • Chapters 2-3

Discuss (Newsgroups):

What does it mean to say that technology is "shared minds made visible?"What would Frank Smith say if he was asked to respond to the National Research Council position on learning?

Explore (web):

Visit Learning with Technology... an example of a resource created by learners for the web.

Knowledge Hunt: Bring back something that you learn from this site, one of the sites in the intro or your own search to share with the group.

Meet (Tapped In):

Sep. 24: Learning Circle discussion of portfolio ideas Oct. 1: Class Discussion --sharing what we learned on our knowledge hunt

Learning Portfolio Assignment

Learning Blueprints Due SEPTEMBER 30

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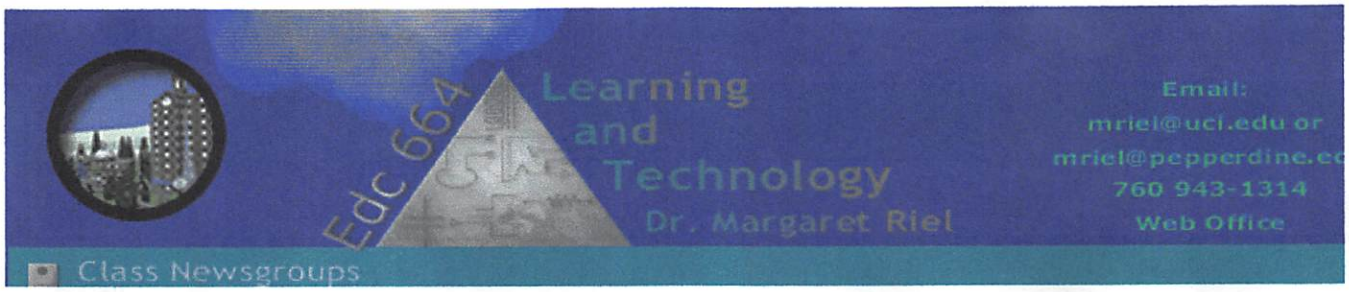

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C7: Nov 26 -Dec 15

Designing your Learning Experience

Demonstrating Learning

Grading

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Learning Cycle Schedule:

Cycle 3: How Children Learn

Oct. 1- 15

Learning is a basic human function; however, it is very difficult to teach something to someone who does not want to learn. Unfortunately, many of the students in our schools have made "not learning" their primary work. Without student interest, learning proceeds at a very slow pace, if at all. When teachers are the learners in workshops or institutes, these contexts need to be learner-centered as well. Learning is an active, exciting process that can be difficult, frustrating, and challenging but is not inherently boring. Boredom sets in when learning is reduced to repetitive actions or assignments that are disconnected from larger goals or contexts. Skill development requires some amount of practice but practice is motivated by performance. The player who shoots baskets or blocks shots in practice has visions of how these skills will play out in the next game. The game provides the attitude and motivation to practice hard. In the context of the classroom, performance is often reduced to memory exercises on tests. When students are engaged in projects, teachers often feel constrained to limit student choice to topics which can be well investigated with the resources available in the classroom, or in the school or local libraries. This restricted range means that teachers will be reading repetitive papers each year. Students know that this writing is simply an exercise. Their teachers are not reading their writings for content and ideas but rather to evaluate the form of the writing. For many students and teachers, there is a disconnect with students redefining the task as writing "what the teacher wants to read." With the growing informational and human resources on the Internet, a student, with access, can find a wide range of materials on almost any topic. If students have more latitude, in both the topic and resources selected, it is more likely that they will be able to create original knowledge products. More important than choice is an audience that is interested in the outcome of their research, development or insights. Research has demonstrated that authentic tasks with real audiences have resulted in increased learning, stronger writing, and longer retention of learning and even increased performance on standardized tests of writing. But more than test score results, students engaged in building knowledge products for others develop a sense of purpose and value. They contribute to their community.

Read:

Learning and forgetting • 41-73
How people learn • Chap 4-5

Reread Newsgroups intros from the first cycle that describing learning contexts for students

Discuss:

What were the critical features of the learning contexts we shared?
What does Brain Research say about education?
How is adult learning different than child Learning?

Explore:

Watch "The Pond" video

from the Captured Wisdom Collection
from – NCREL–

Lesson Plans for the Projects on water.

ThinkQuest – pick one of the finalist entries explore and discuss the students' conception of teaching and learning.

Meet:

Oct. 8:Learning Circle
discussions of portfolio ideas
Oct. 15: (7am or 7 pm) Class
Discussion on Comparison
between the pond projects

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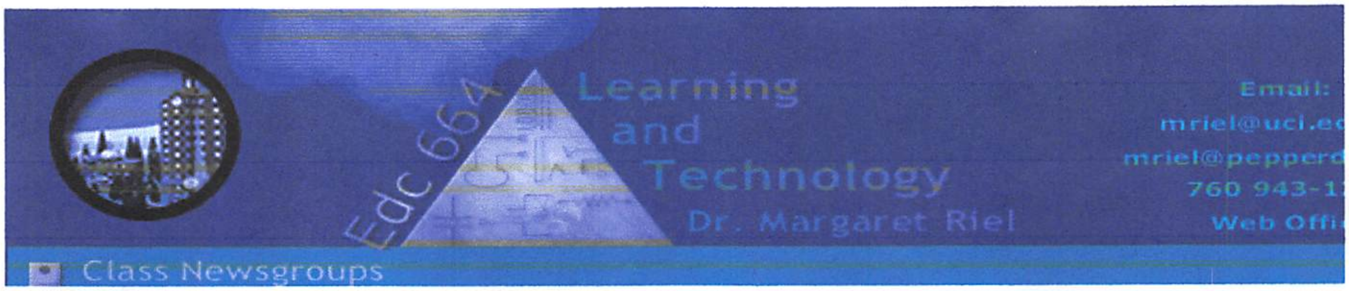

Overview

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WAYS OF DEMONSTRATING NEW KNOWLEDGE -

Reflective Learning Project

You will be creating a learning portfolio online. It will include evidence of each of these phases although the order is up to you. Both the reflective learning and the service learning projects have the same steps, however the emphasis will vary. The final step --your reflection on the learning-- is a critical part of the learning in both activities.

Reflective Learning

1) Learn Something 10% of portfolio grade
Students should collect resources, read materials related to the field, be reflective in their practice and demonstrate an understanding of their newly acquired knowledge. It is assumed that digital and traditional materials will be used for research purposes.

2) Make Something 25% of portfolio grade
Constructionism is a participatory sport. Students should construct a project using a computer that requires effort, creativity and persistence. This project should help the student learn more about their topic of inquiry through the active exploration of a problem or set of problems.

3) Use Something 10% of portfolio grade
Students should use a few different pieces of software related to their area of inquiry. You should be able to compare and contrast the ease-of-use, applicability and flexibility of the software packages. Some constructions will require the use of several different software packages. The more open-ended the package, the better. Packages such as StarLogo, MicroWorlds, Tabletop, Stella, graphics packages, Geometer's Sketchpad, Interactive Physics and musical sequencers are the types of software I have in mind. Of course, basic tool software counts, but not too

much! Reflections on learning these new packages should be included in your portfolio.

4) Join Something 10% of portfolio grade
Students should find an online community of practice and/or professional organization dedicated to your area of inquiry. You should participate in this community and record your interactions for inclusion in your portfolio.

5) Teach Something 5% of portfolio grade
Share your project with your colleagues in your learning circle. You might wan to ask them to solve a problem related to your construction. Record your interactions and reflect upon the teaching/learning that occurs.

6) Publish Something 20% of portfolio grade
All of your work should be assembled in a digital online web portfolio. This portfolio should include your construction (via screen shots if no online plug-in is available), sketched from your design notebooks, online resources used by you and related to your area of inquiry, links to related materials, logs of salient online communications, what your learned about the area of inquiry, reflections on your learning and reviews of software packages used. The final portfolio should be well organized, visually attractive and make a contribution to the world of ideas.

Reflect on Learning. 20% of portfolio grade
While this reflection is primarily focused on the digital project, it can include thoughts on all parts of the course. This final commentary, like the one we read in the first week is your opportunity to pull together the learning experiences that you had during the course.

SAMPLE STUDENT PORTFOLIOS Learning with Video games
* Learn by reading relevant research and literature (pop and scholarly) related to video games
* Construct a video game in MicroWorlds or other package
* Learn to play a few video games alone or with a child. Reflect on your learning.
* Join an online community of gamers. You may even play an online game.
* Teach a colleague to play a video game and reflect on the experience.

* Publish your portfolio of work on the web.

Artificial Life
* Learn about artificial life by reading articles and books such as Artificial Life by Steven Levy and Turtles, Termites and Traffic Jams by Mitchel Resnick.
* Construct an artificial world in StarLogo.
* Learn to explore aspects of artificial life in StarLogo, MicroWorlds and Creatures.
* Join an online A-Life Community
* Teach a colleague or student(s) about important aspects of A-Life.
* Publish your portfolio of work on the web.

Digital Music
* Learn about different aspects of digital music production.
* Construct (compose) a pleasing piece of music using a MIDI device and/or sequencing/notation software.
* Learn, evaluate, compare and contrast a variety of software packages. Gain understanding of MIDI.
* Join an online community of digital musicians, composers or musicologists.
* Teach a colleague or student(s) about some portion of what you learned.
* Publish your portfolio of work on the web.

See the Rubric for example.

Sample: Rubric for Digital Portfolio

____ Subject matter is accurate.
____ Applies current instructional principles.
____ Project is appropriate to learning outcomes.
____ Content is appropriate to level of student.
____ Presentation is grammatically correct.
____ Presentation is visually appealing.
____ Reflection integrates learning experience with ideas for the course readings and discussions.

Previous projects have included--simulation design, digital poetry, music composition, artificial intelligence, virtual worlds, multimedia, digital video production, global information systems, video conferencing, animation, and many other topics.

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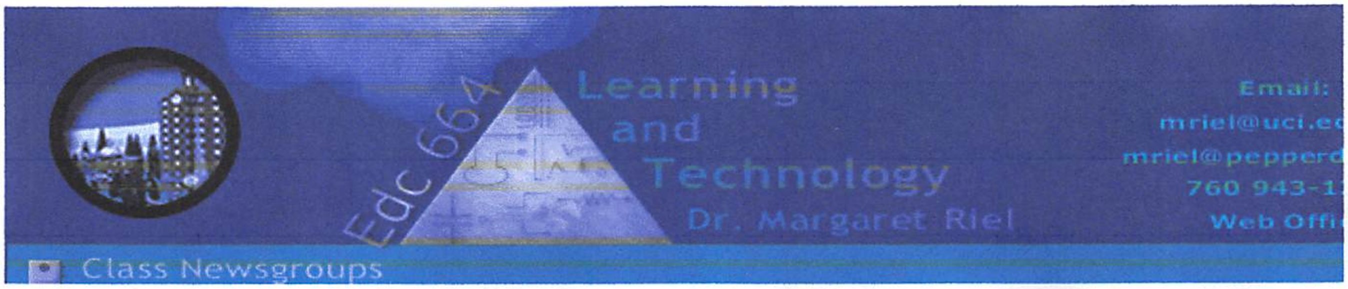

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Designing Your LEARNING Experience

The main learning process in this class is via project work and reflection on that work. Specifically, doing something and thinking about it with others and alone. Learning is most effectively accomplished with the help of others, though you will be graded as an individual and as a member of a small group. Depending on the topic you choice to learn about, you have two options for sharing. One is a exhibition to the class and the other is an exhibition on the web.

You begin by selecting an area of inquiry and designing a plan to explore and exhibit newfound learning. Play to your strengths and do not leave the hardest work to the last minute. The best work in this class has been created by students who embraced the opportunity to learn something new. *No topic is too crazy.* The project follows the same structure as the course and includes these processes not necessarily in this order:

- LEARN
- REFLECT
- CONSTRUCT
- DISCUSS
- EXHIBIT

Creativity, intellectual rigor and innovation are highly valued! Each student will choose an area of inquiry which all course work, with the exception of assigned readings and classroom tutorials, will revolve around. An area of inquiry should be deep and broad enough for a student to demonstrate new learning and provide opportunity for rich exploration and construction.

Chosen areas should be fields/topics/disciplines already changed/enhanced by technology or could be in ways developed by a student. Several pieces of software should be mastered and evaluated relative to the chosen area of inquiry. You may know something about an area of inquiry or have a significant interest in that topic, *but still have room for growth*.

Topics might include: artificial life, virtual creatures, video game design, digital poetry, digital imaging and graphics production, music composition, artificial intelligence, virtual worlds, number theory, chaos theory, fractal geometry, global information systems, data collection and interpretation, physics, genetics.

All of your work, thoughts, products, logs and discovered digital resources will be assembled in a digital portfolio on the World-Wide-Web. This portfolio is created throughout the term. The learning blueprint must be completed and have it signed by the deadline. Plan your work, jot down the due dates of your project selections and major milestones in their completion. Include other major obligations that might impinge on your course work from outside this course. Attach a copy of the completed calendar of events to your course blueprint.

Your learning blueprint must be submitted before midnight PST on 9/30/01 through email. I will keep a copy and you will keep a copy. No changes after 10/4/01. I will evaluate the projects the first week of November. Of course you are free to generate your own proposed activities and clear them with me but you must do so before 9/30/01.

There is also the option of an alternative project.

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